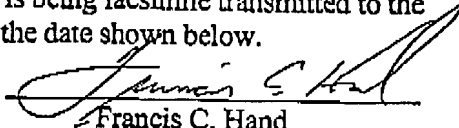


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MAY 15, 2007  
Date

  
Francis C. Hand

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit: 1724  
Examiner: Scott Bushey  
Applicant: Florian Kehrer  
Serial No: 10/780,243  
Deposited: February 17, 2004  
Title: Liquid Distributor

Customer No.: 27162

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Reply Brief

Sir:

This is in response to the Examiner's Answer dated April 25, 2007. No request is being made for an Oral Hearing.

The Examiner has raised new issues, namely:

- I. that the oblique walls 24 of the gutter 14 of Acker provide the claimed throttle means;
- II. that the combination of the porous material 52 and the angled walls 24 of Acker provide a hydrodynamic balance by their throttling of the liquid flow therethrough;

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- III. that the vast majority of the liquid dripping from the porous material 52, with or without spacer caps 26 lying thereover, would drip from the lateral edges of the drip points;
- IV. that the teachings of Acker, in part, provide that liquid will drip from the spaced drip points; and
- V. that the grate 50 (Fig. 6) of Acker at least approximates appellant's claimed mesh structures.

**I. The oblique walls 24 of the gutter 14 of Acker do not provide the claimed throttle means**

As shown in Fig. 3 of Acker, water flows from a hole 46 in the bottom of a pipe 44 into the trough 14 and onto the cord 34. (see column 3, lines 35 et seq).

Since the water from the hole 46 passes directly into the cord 34, the oblique walls 24 of the gutter do not receive the water and cannot throttle the flow of water from the hole 46.

There is no teaching in Acker that the water flowing from the hole 46 is to be throttled in any way other than to be distributed along the length of the cord 24.

The Examiner alleges that the oblique walls 24 of Acker taper inwardly leaving a smaller flow gap than the vertical side walls 22 thus providing the claimed throttle means. There is no question that the oblique walls 24 taper inwardly. However, water does not flow between the vertical walls 22 into the space between the oblique walls 24. Instead, water flows from the hole 46 in the bottom of the pipe 44 directly into the cord 34.

Hence, the Examiner is in error in alleging that the oblique walls 24 of Acker provide the claimed throttle means.

Further, moving a flow of water from one channel of larger cross-section to a second channel of smaller cross-section does not throttle the flow. Based on the basic fluid

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dynamics formula  $Q = AV$  (wherein  $Q$  is the quantity of flow,  $A$  is the cross-sectional area and  $V$  is the velocity), the same quantity of flow would occur in both channels but at different velocities.

The Examiner states in page 3 of the Answer "Below the channels are guide means (52 in Fig. 7), which pass through gutter means (14) having a tapering region and a gap, which throttles liquid flow through the distributor." This statement appears to hold that the guide means [porous material] 52 throttles the liquid flow. If so, the statement is contrary to the Examiner's position that the oblique walls 24 of Acker provide the claimed throttle means.

**II. The combination of the porous material 52 and the angled walls 24 of Acker do not provide a hydrodynamic balance and do not throttle a liquid flow therethrough**

As noted above, the angled walls of Acker do not throttle the flow of water from the hole 46 in the pipe 44. Hence, the combination of the porous material 52 and the walls 24 can not throttle the flow of water from the hole 46 in the pipe 44 and can not provide a hydrodynamic balance.

**III. The Examiner is in error in holding that the vast majority of the liquid dripping from the porous material 52, with or without spacer caps 26 lying thereover, would drip from the lateral edges of the drip points**

The Examiner appears to be taking a position that the majority of water, with or without spacer caps 26, would drip from the sides of the depending triangular fingers of the porous material 52 of Fig. 7 directly onto the sloped portions of the plates 40 (as shown in Fig. 4). If so, the Examiner is in error.

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If there were spacer caps 26, as posited by Appellants, the majority of the water would be caused to flow out the sides of the triangular fingers of the porous material 52 and would fall under gravity onto the sloped portions of the plates 40. In addition, the remainder of the water would fall from the flat bottom surfaces of the material 52 between the triangular fingers. In this case, the porous plastic material of Acker does not have a drip edge at a lower end as required by claim 1.

If there were no spacer caps 26, water would drip from the lowermost edges of the porous material 52 under the law of gravity as well as from the flat bottom surfaces of the material 52 between the triangular fingers. Further, since the plates 40 are spaced apart below the spacer caps 26 in Fig. 4, most of the water dripping from the lowermost edges of the porous material 52 would fall between the plates 40. This would be contrary to the teachings of Acker.

**IV. The teachings of Acker do not provide  
that liquid will drip from the  
spaced drip points**

The Examiner alleges that the teachings of Acker provide that liquid will be throttled by the converging gap between the sidewalls of the gutter and the liquid will drip from the spaced drip points of the porous element 52 when applied to the gutter 14 from the orifices 46 of the channels 44. The Examiner is in error.

First, as noted above, Acker does not provide that liquid will be throttled by the converging gap between the sidewalls 24 of the trough 14.

Second, if water were to drip from the lowermost edges of the porous material 52, these drips would pass between the plates 40 that are spaced apart below the spacer caps 26 in Fig. 4. This would be contrary to the teachings of Acker, i.e. to distribute water

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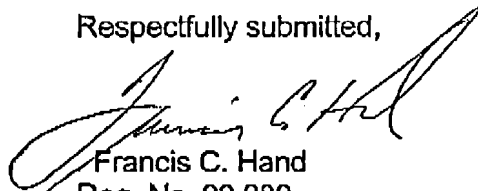
in a uniform manner onto the evaporative cooling surfaces [i.e. plates 40] without humidification of the secondary air. (See column 1, lines 51 to 62).

**V. The grate 50 (Fig. 6) of Acker does  
not approximate appellant's claimed  
mesh structures**

The grate 50 of Acker is illustrated in Fig. 6 as a flat plate with holes. The purpose of the grate 50 is to filter and distribute water evenly throughout the upper portion of the trough 14 (see column 3, lines 61-65).

The grate 50 of Acker does not constitute a structure as required by claim 6, namely "an areal guide means ... to receive and laterally disperse at least one of the streams of liquid flowing from said apertures of said channel, *said guide means having a drip edge at a lower end* for dispensing drops of the liquid received thereon ... said guide means [being] a mesh having a fine mesh structure for distribution of a liquid with low viscosity."

Respectfully submitted,



Francis C. Hand  
Reg. No. 22,280  
CARELLA, BYRNE BAIN, GILFILLAN,  
CECCHI, STEWART & OLSTEIN  
Five Becker Farm Road  
Roseland, NJ 07068  
Phone: 973-994-1700  
Fax: 973-994-1744

#316653